

CLAIMS

1. Microcrystalline paraffin as solid product, which  
5 can be prepared by catalytic hydroisomerization of  
FT paraffins having a carbon chain length  
distribution in the range from 20 to 105 at  
temperatures above 200°C.
- 10 2. Microcrystalline paraffin according to claim 1 or  
in particular according thereto, characterized in  
that at 25°C it is not liquid but at least paste-  
like to solid with a needle penetration value of  
less than  $100 \times 10^{-1}$  mm, measured in accordance  
with DIN 51579.
- 15 3. Microcrystalline paraffin according to claim 1 or  
in particular according thereto, characterized in  
that it is free of aromatic and heterocyclic  
compounds.
- 20 4. Microcrystalline paraffin according to claim 1 or  
in particular according thereto, characterized in  
that it is free of naphthenes.
- 25 5. Microcrystalline paraffin according to claims 1 to  
4 or in particular according thereto,  
characterized in that the proportion by weight of  
isoalkanes is greater than that of n-alkanes.
- 30 6. Microcrystalline paraffin according to any of  
claims 1. to 5, characterized by use properties  
which, even though comparable with those of  
microcrystalline paraffins based on petroleum, are  
in between these and the properties of the FT  
35 paraffins used in the preparation.
7. Process for preparing a microcrystalline paraffin,  
in particular a microcrystalline paraffin

according to any of claims 1 to 4, by catalytic hydroisomerization by

- 5           A. use of FT paraffins as starting material,  
            having carbon atoms in the range from 20 to 105  
            and
- B. use of a catalyst
- 10           C. use of a process temperature above 200°C and
- D. action of pressure in the presence of hydrogen.
- 15           8. Process according to claim 7 or in particular  
            according thereto, characterized by the use of a  
            catalyst based on a zeolite, preferably a  $\beta$ -  
            zeolite, having a pore size between 0.50 and  
            0.80 nm as support material and a metal of  
            transition group 8 as active component.
- 20           9. Process according to claim 7 or 8 or in particular  
            according thereto, characterized in that it is  
            carried out at elevated pressure and elevated  
            temperature.
- 25           10. Process according to any of claims 7 to 9 or in  
            particular according thereto, characterized by a  
            process temperature from 200 to 270°C.
- 30           11. Process according to any of claims 7 to 10 or in  
            particular according thereto, characterized in  
            that the pressure is 2 to 20 MPa.
- 35           12. Process according to any of claims 7 to 11 or in  
            particular according thereto, characterized in  
            that the pressure is 3 to 8 MPa.
13. Process according to any of claims 7 to 12 or in

process temperature of 230 to 270°C.

14. Process according to any of claims 7 to 10 or in particular according thereto, characterized by a feed ratio of hydrogen to FT paraffin from 100:1 to 2000:1 standard m<sup>3</sup> per m<sup>3</sup>.
15. Process according to any of claims 7 to 14 or in particular according thereto, characterized by a feed ratio of hydrogen to FT paraffin from 250:1 to 600:1 standard m<sup>3</sup> per m<sup>3</sup>.
16. Process according to any of claims 7 to 15 or in particular according thereto, characterized in that it is carried out at a loading from 0.1 to 2.0 v/vh, preferably 0.2 to 0.8 v/vh.
17. Process according to any of claims 7 to 16 or in particular according thereto, characterized in that the catalyst has a pore size between 0.55 to 0.76 nm.
18. Process according to any of claims to 17 or in particular according thereto, characterized in that the catalyst comprises a hydrogenation metal component of transition group VIII of the Periodic Table.
19. Process according to any of claims to 18 or in particular according thereto, characterized in that the catalyst comprises platinum as hydrogenation metal.
20. Process according to any of claims 7 to 19 or in particular according thereto, characterized in that the platinum content of the catalyst is 0.1 to 2.0% by mass, preferably 0.4 to 1.0% by mass, based on the catalyst fired at 800°C.

21. Process according to any of claims 7 to 20 or in particular according thereto, characterized in that the FT paraffin is used in a solidification point range from 70 to 105°C, preferably with solidification points of 70, 80, 95 or 105°C.
22. Process according to any of claims 7 to 21 or in particular according thereto, characterized in that the microcrystalline paraffins are prepared from the FT paraffins in a single process step, optionally additionally with removal of the short-chain constituents.
23. Use of the microcrystalline paraffins according to claims 1 to 6 and/or microcrystalline paraffins prepared according to process claims 7 to 21 in the pharmaceutical or cosmetics sector or in the food industry.
24. Use of the microcrystalline paraffins according to claims 1 to 6 and/or the microcrystalline paraffins prepared according to process claims 6 to 20 in the pharmaceutical or cosmetics sector or in the food industry.